

Implementation Considerations

Modules Roadmap:

You Are Here

NIEM Overview

IEPD Concepts

How NIEM uses XML (pt. 1)

How NIEM uses XML (pt. 2)

Business Skills

Exchange Content Modeling

Mapping

Subsets

Extension and Exchange
Schemas

Packaging and Distribution



**Implementation
Considerations**

Objectives Roadmap

This module supports the following course objective:



Describe what NIEM is.



Describe what an IEPD is.



Comprehend artifacts included in an IEPD.



Develop artifacts included in an IEPD.



Package an IEPD.



Understand advanced XML concepts, as required by NIEM.



Recognize business skills required to successfully participate in an IEPD development project.

NIEM Conformance

- Instances must validate against the set of NIEM reference schemas.
- If the appropriate component (type, element, attribute, etc.) required for an IEPD exists in NIEM, use that component.
- Be semantically consistent. Use NIEM components in accordance with their definitions.
- Adhere to the NIEM Naming and Design Rules (NDR) to ensure correct, consistent schema development.

Scope of NIEM

- A NIEM IEPD only addresses the business data content and format of an IEP.
- There are many methods of delivering an IEP from one system to another.
- There are many methods of implementing an IEP exchange capability in a system.
- The delivery method and implementation are outside the scope of NIEM.

IEP Delivery Method

- All participants in the exchange must agree on a method of delivering the IEP.
- Some examples:
 - ◆ Web service, defined by a specific Web Services Description Language WSDL file
 - ◆ Message queuing
 - ◆ Message switch/message broker
 - ◆ Enterprise Service Bus

IEP Capability Implementation

- The method of implementing an IEP exchange capability in participating systems (using an agreed-to delivery method) can be different.
 - ◆ WebSphere MQ
 - An IBM z/OS mainframe with a COBOL application
 - A Sun Solaris platform with a Java application
 - ◆ Web Service
 - Intel Linux with Apache and a Java application
 - Intel Windows Server with IIS and C# application

Justice Reference Architecture (JRA)

- Best practices approach to an SOA.
- Reference architecture that addresses the full range of information sharing use cases.
- Provides a comprehensive blueprint for implementing interoperable data sharing services and capabilities.
- Applies to more than just the justice community:
 - ◆ Actual capabilities/services are specific to domains.
 - ◆ Architectural approaches are general.
- Currently completing conceptual development.
- <http://it.ojp.gov/globaljra/>

JRA Deliverables

- Guidance Documents:
 - ◆ Services Specification Guideline
 - ◆ Services Identification and Design Guideline
- A prioritized high-level business decomposition of the justice domain.
- Service Descriptions.
- Tools Strategy Recommendations.

Web Service Considerations

- Method 1: Web service has visibility into IEP.
 - ◆ IEPD XML Schema is imported into the WSDL.
 - ◆ The web service serializes and de-serializes the XML IEP and performs XML validation.
 - ◆ Classes can be generated automatically, but a NIEM IEPD can result in many classes.
 - ◆ May have problems with substitution groups.

Web Service Considerations

- Method 2: Web service has no visibility into IEP.
 - ◆ The IEP is represented as a string in the WSDL.
 - ◆ The web service is just a pass through for the IEP.
 - ◆ Applications must generate, parse, and validate the XML IEP.

Additional Considerations

- Validation is the largest performance hit.
 - ♦ XML appliances can perform validation with high throughput.
 - ♦ Validation can be relegated to the testing phase and not performed in production.
- XSLT Transformations
 - ♦ Can also be a large performance hit.
 - ♦ Relational nature means there are many **s:id** and **s:ref** links to be resolved.

Objectives Summary:

By the end of Day 3, you will be able to:



Describe what NIEM is.



Describe what an IEPD is.



Comprehend artifacts included in an IEPD.



Develop artifacts included in an IEPD.



Package an IEPD.



Understand advanced XML concepts, as required by NIEM.



Recognize business skills required to successfully participate in an IEPD development project.

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